

Study of Variation in Chlorophyll a Concentration around ONGC Offshore Locations in Bay of Bengal

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Abstract—Chlorophyll a plays a significant role in photosynthesis and produces life-sustaining oxygen. The concentration of chlorophyll a in a sea is an indicator for the amount of photosynthetic planktons or phytoplanktons which feed the marine food web. Monitoring chlorophyll a levels is a direct way of tracking algal growth. Phytoplankton growth depends on available sunlight, temperature and nutrients levels. The paper includes the outcome of monitoring activities of ONGC considering chlorophyll a as one of the vital criteria for assessing the environmental health near ONGC offshore locations in Bay of Bengal. The total chlorophyll a concentration was measured by filtration of water samples (1L) on What man GF/F filters (0.7µm) and subsequent extraction in 10mL 90% Acetone. The extracted chlorophyll a was measured using a Turner Fluor meter (Trilogy, Turners design, USA) following standard procedure (UNESCO, 1994). A trend analysis of the concentration of Chlorophyll a has been done considering the monitoring data for three offshore blocks in Bay of Bengal from the year 2014-15 to 2018-19 & their variation has been studied. Block KG OS DW III shows a decreasing trend line with maximum average concentration of 0.93µg/L & minimum average concentration of 0.08µg/L. Block KG OSN 2004 shows a decreasing trend line with maximum average concentration of 0.56µg/L & minimum average concentration of 0.34µg/L. Block KG DWN 98/2 shows a decreasing trend line with maximum average concentration of 0.24µg/L & minimum average concentration of 0.11µg/L.